

4.3 Economic Impacts

4.3.1 Business Impacts

No substantive change in impacts has occurred to this resource since publication of the 1996 FEIS. Refer to the [1996 FEIS, Section 4.3.1](#) for a description of resource impacts.

4.3.2 Employment

Employment impacts of the Preferred Alternative were evaluated in the Socio-Economic and Land Use Impacts of the Proposed I-355 Extension study (Appendix A). The following is a summary of study findings concerning employment growth.

The study found that while NIPC forecasts a doubling in employment within the Study Area between 1990 and 2020, the impact of the Preferred Alternative on stimulating this employment growth was negligible. This conclusion was based on an analysis that isolated the impacts of the Preferred Alternative from all other transportation projects designated within the 2020 Regional Transportation Plan (RTP). The study consisted of a two-tier analysis. The first tier reviewed the employment impacts, within the Study Area, of implementing all projects within the 2020 RTP. These projects included the Preferred Alternative. The second tier reviewed the impact of implementing all 2020 RTP projects except the Preferred Alternative. The subtraction of one from the other gives the impact of the Preferred Alternative.

The first tier analysis found the employment effects within the Study Area attributable to the 2020 RTP to be insignificant. This is because the early stages of the 2020 RTP focus on improving access to the north and northwestern portions of the region. While improving access within the north and northwest portions would attract population growth to those areas that otherwise may have located elsewhere in the region, including the Study Area, it tends to reinforce existing employment development in the region's core employment centers. These are primarily the Chicago central area and the O'Hare Airport and its nearby suburban job centers, including major commercial centers such as Oakbrook and Schaumburg. The analysis estimated that constructing all the transportation projects of the 2020 RTP increased employment within the Study Area by less than one percent; and that incremental increase was at the northern edge of the Study Area. The central and southern portions of the Study Area would forfeit employment growth.

The second tier analysis found the employment effects within the Study Area attributable to the Preferred Alternative to be negligible. Constructing the Preferred Alternative would not increase employment growth beyond that projected under the No-Action Alternative. While the study found that constructing the Preferred Alternative did not increase employment growth, the Preferred Alternative did influence employment distribution within the Study Area. The Preferred Alternative acted to concentrate job growth geographically within the Study Area within the vicinity of the Tollroad/Freeway alignment junctions with I-55 and I-80.

In addition to concentrating employment growth, the study found the Preferred Alternative also improved access from the Study Area to the large and growing suburban job centers in DuPage and northwest Cook Counties and the O'Hare Airport and its nearby

suburban job centers. The improved access was a result of lower projected travel times from the Study Area to these suburban job centers.

Improved highway access in Will County, along I-355, would affect employment in two ways. It would permit workers to live in northwestern Will County and to work in the existing and growing job concentrations of southern and central DuPage County. It also would concentrate the development of nearby employment centers within the county along I-355 at the intersection of I-355 and I-80. It would enable workers to live in areas of their choice and within their means while working in existing job concentrations. In fact, much of this population growth has taken place, but works trips remain longer than the regional average.

4.3.3 Tax Revenues

No substantive change in impacts has occurred to this resource since publication of the 1996 FEIS. Refer to the [1996 FEIS, Section 4.3.3](#) for a description of resource impacts.

4.3.4 Property Values

No substantive change in impacts has occurred to this resource since publication of the 1996 FEIS. Refer to the [1996 FEIS, Section 4.3.4](#) for a description of resource impacts.

4.4 Land Use and Zoning

All land within the Project Corridor is under the jurisdiction of a county or local government with an adopted land use plan and zoning ordinance. Within the Project Corridor, Will County has jurisdiction over land use within unincorporated areas. Municipal governments have jurisdiction over the Project Corridor incorporated areas.

Will County and the municipal governments located within the Project Corridor reviewed the Preferred Alternative for consistency to their respective land use and transportation plans. The Preferred Alternative was found by these county and municipal governments to be consistent with their current land use plans.

In addition to the plan consistency review, a survey of the Will County Board, and Project Corridor mayors and village administrators was conducted. The survey achieved a 100 percent response rate and found that 90 percent of the survey respondents supported constructing the Preferred Alternative and felt that it would help achieve the land use goals of their communities. Appendix B provides additional data concerning the plan consistency review and local survey.

Additional review of the land use impacts of the Preferred Alternative was conducted in the Socio-Economic and Land Use Impacts of the Proposed I-355 Extension (Appendix A). The study found the Preferred Alternative to stimulate less than a two percent increase in Study Area population growth over the No-Action Alternative.

Consistent with the methods used to estimate employment impacts of the Preferred Alternative discussed in Section 4.3.2 (Employment) of this section, a two-tiered analytical approach was used to estimate population impacts. Like the effect of the Preferred Alternative on employment, the effect of the Preferred Alternative on population was to consolidate growth adjacent to the alignment to promote higher development densities along

the corridor. Consolidating growth within the Study Area would be consistent with regional land use goals of keeping the urbanized areas compact by focusing development as close as possible to the Chicago urban core.

4.5 Agricultural Impacts

4.5.1 Prime and Important Farmlands

No substantive change in impacts has occurred to this resource since publication of the 1996 FEIS. Refer to the [1996 FEIS, Section 4.5.1](#) for a description of resource impacts.

4.5.2 Agricultural Land Conversion and Production Loss

No substantive change in impacts has occurred to this resource since publication of the 1996 FEIS. Refer to the [1996 FEIS, Section 4.5.2](#) for a description of resource impacts.

4.5.3 Affected Farm Operations

No substantive change in impacts has occurred to this resource since publication of the 1996 FEIS. Refer to the [1996 FEIS, Section 4.5.3](#) for a description of resource impacts.

4.5.4 Land Evaluations and Site Assessment

No substantive change in impacts has occurred to this resource since publication of the 1996 FEIS. Refer to the [1996 FEIS, Section 4.5.4](#) for a description of resource impacts.

4.5.5 Borrow Pits

No substantive change in impacts has occurred to this resource since publication of the 1996 FEIS. Refer to the [1996 FEIS, Section 4.5.5](#) for a description of resource impacts.

4.5.6 Measures to Minimize Impacts to Agriculture

No substantive change in impacts has occurred to this resource since publication of the 1996 FEIS. Refer to the [1996 FEIS, Section 4.5.6](#) for a description of resource impacts.

4.6 Forest Preserves and Parks

No substantive change in impacts has occurred to this resource since publication of the 1996 FEIS. This includes Section 6(f) lands. Refer to the [1996 FEIS, Section 4.6](#) for a description of resource impacts.

4.7 Bikeways

No substantive change in impacts has occurred to this resource since publication of the 1996 FEIS. Refer to the [1996 FEIS, Section 4.7](#) for a description of resource impacts.

4.8 Cultural Resources

4.8.1 Historic and Archaeological Resources

No substantive change in impacts has occurred to this resource since publication of the 1996 FEIS. Refer to the [1996 FEIS, Section 4.8.1](#) for a description of resource impacts.

4.9 Geology and Mineral Resources

No substantive change in impacts has occurred to this resource since publication of the 1996 FEIS. Refer to the [1996 FEIS, Section 4.9](#) for a description of resource impacts.

4.10 Water Quality and Water Resources

4.10.1 Groundwater Resources

No substantive change in impacts has occurred to this resource since publication of the 1996 FEIS. Refer to the [1996 FEIS, Section 4.10.1](#) for a description of resource impacts.

4.10.2 Impacts to Surface Waters

No substantive change in impacts has occurred to this resource since publication of the 1996 FEIS. Refer to the [1996 FEIS, Section 4.10.2](#) for a description of resource impacts.

Construction Impacts to Surface Waters

No substantive change in impacts has occurred to this resource since publication of the 1996 FEIS. Refer to the [1996 FEIS, Section 4.10.2.1](#) for a description of resource impacts.

Operational Impacts to Surface Waters

The operational impacts of the Preferred Alternative include the accumulation of pollutants on highway surfaces, median areas and adjoining right-of-ways as a result of highway use, natural contributions and deposition of air pollution. These pollutants include solids, heavy metals (lead, zinc and copper), oil and grease and nutrients. The concentrations of these pollutants are highly variable by site and are affected by numerous factors such as traffic characteristics, climate, maintenance activities and adjacent land uses.

Highway runoff pollution may affect water quality of receiving waters through shock or acute loadings and through chronic effects from long-term accumulation within the receiving waters. The significance of these impacts is very site specific, and will depend heavily on the receiving water characteristics. Research (Bertram and Kaster, 1982; Dupuis, et al, 1984; Dupuis and Kobriger, 1985) indicates few significant impacts for highways with less than 30,000 ADT volumes. The traffic volumes vary between 47,000 and 85,000 ADT in the Project Corridor, requiring a more detailed analysis of each watershed.

Stream concentrations associated with the roadway improvements were estimated for each watershed utilizing the procedure developed by Driscoll et al (1990). The results of the estimation for each watershed are located in the 2000 Water Quality Technical Report. The efficiency of stormwater management designs was demonstrated through analysis of representative roadway pollutants, lead, zinc and copper. Detention basins placed in each watershed reduced these heavy metal concentrations in roadway runoff, and all streams achieved the general use water quality standards. Black Partridge Creek is presented below because of its uniqueness in the Project Corridor.

The [1996 FIES, Section 4.10.2.2 Operational Impacts to Surface Waters](#) presents additional water quality data compiled prior to this SFEIS.

Black Partridge Creek

Black Partridge Creek is unique within the Project Corridor because it is supplied by numerous natural springs and has the characteristics of a cool, clear stream. The lower portion of the stream passes through the Black Partridge Nature Preserve. The seeps and stream are two of the significant features of the preserve. The Preferred Alternative does not cross the main channel of Black Partridge Creek; however, the edge of the right-of-way is within 61 meters (200 feet) at the nearest point. Of the three intermittent tributaries forming Black Partridge Creek, one is directly crossed by the alignment. Direct watershed effects are associated with this culvert crossing; however, this represents less than 0.26 square kilometers (0.1 square miles) of the 7.8 square kilometers (3.0 square miles) Black Partridge Creek drainage basin.

The water quality of the combined tributaries forming the headwaters of Black Partridge Creek continues to show the impact of land use changes associated with commercial and residential development. Chloride total dissolved solid (TDS) concentrations within the Black Partridge Forest Preserve and downstream of Bluff Road exceeded Water Quality Standards in February, 2000 (Chloride 700 to 750 mg/L (9.3×10^{-2} to 0.1 oz/gal); TDS 1,500 mg/L (0.2 oz/gal)).

To minimize impacts to Black Partridge Creek, one design change and one operating change were evaluated. First, the roadway was moved approximately 107 meters (350 feet) west of the recorded alignment. This reduced proximity of the roadway to Black Partridge Creek decreased potential salt transport. Second, during roadway operation, surface runoff south of Davey Road will be collected, detained, and discharged outside of the Black Partridge Creek watershed. This eliminates 3.7 kilometers (2.3 miles) or 22 percent of anticipated highway runoff to Black Partridge Creek. The drainage collected will be directed west into a treatment pond and then into a tributary that discharges to the wetland and floodplain areas in the Keepataw Preserve.

However, because of the significant land use changes that have already occurred within the upper watershed of Black Partridge Creek, it is unlikely that runoff from the Preferred Alternative will cause adverse water quality or biotic impacts to the lower watershed of Black Partridge Creek.

Monitoring of Black Partridge Creek has been ongoing since 1994 and continues in accordance with previous commitments. Refer to the [1996 FEIS, Section 6.5.2](#) for a description of the monitoring program.

Maintenance (Deicing Chemicals) Impacts

No substantive change in impacts has occurred to this resource since publication of the 1996 FEIS. Refer to the [1996 FEIS, Section 4.10.2.3](#) for a description of resource impacts.

Surface Runoff

No substantive change in impacts has occurred to this resource since publication of the 1996 FEIS. Refer to the [1996 FEIS, Section 4.10.2.3](#) for a description of resource impacts.

Splash

No substantive change in impacts has occurred to this resource since publication of the 1996 FEIS. Refer to the [1996 FEIS, Section 4.10.2.3](#) for a description of resource impacts.

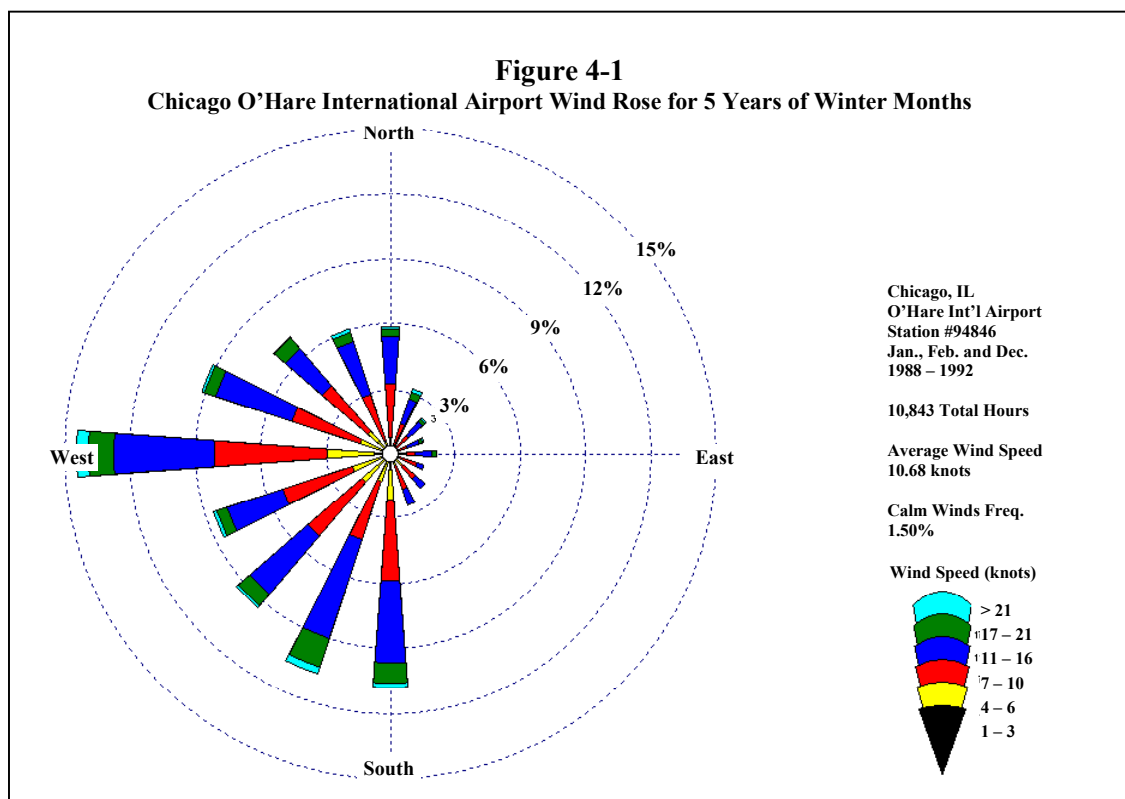
Spray

In fulfillment of one of the environmental impact mitigation commitments agreed to in the 1996 FEIS, a road salt dispersion study was undertaken by Illinois State Water Survey (ISWS) in February 1996. Key components in the study as proposed in the 1996 FEIS included evaluation of the mass emission to the atmosphere, the size distribution of the emitted salt droplets and the concentration and size of these droplets at varying distances from their source. The initial phase of the study was completed in April 2000 and is explained in the ISWS report titled "Atmospheric Dispersion Study of Deicing Salt Applied to Roads: First Progress Report" and is denoted as Contract Report 2000-05 ([Peters, 2000](#)). The report was prepared under contract with the Illinois Department of Transportation (IDOT) and the Illinois State Toll Highway Authority (ISTHA). Later phases of the study will eventually develop an air dispersion model, which will predict the atmospheric dispersion of salt spray and its ultimate deposition. While ISWS has not yet developed a model algorithm for salt spray, the data presented in the First Progress Report allow a rough estimation of salt deposition rates downwind of a highway.

Analysis of meteorological data for the winter months (December, January, February) shows that winds are nearly always from the western quadrants of the compass during this time of year at O'Hare (see Figure 4-1). Therefore, the vast majority of salt deposition will occur east of I-355.

Regression curves in the First Progress Report were applied to the Preferred Alternative to estimate road salt deposition along the proposed right-of-way. To be conservative, the sum of deposition sampled by ISWS north and south of I-55 (which runs from southwest to northeast) was used to estimate a maximum potential total deposition amount, assuming that all deposition occurred in only one direction from the highway.

The ISWS study estimated total annual salt deposition by using a ratio of average annual snowfall (cited as 101.6 centimeters (40 inches)) divided by the average snowfall amount per sampled event (4.1 centimeters (1.6 inches)), multiplied by the average deposition per sampled event. This may somewhat overestimate annual deposition, because the snow falling in large accumulation events would not all be melted by application of salt. Rather, much of this would be plowed from the roadway. The ISWS sampling results of three events along I-55 indicate that the amount of deposition is relatively constant per event, despite significant differences in snowfall amount per event. Inspection of snowfall records for the past 3 years (1998, 1999 and first half of 2000) shows a total of 251 centimeters (98.8 inches) for the period at O'Hare, much of it falling in a few large events. Review of the meteorological data for all snowfall events in this period indicates that there would be an average of approximately 12 storm events per year with salt application.



Based on the data obtained in the ISWS study, an at-grade 4-lane freeway (I-55) would have salt deposition values of approximately 0.6, 0.25 and 0.1 grams/m² (1.2×10^{-4} , 5.1×10^{-5} and 2.0×10^{-5} lbs/ft²), per salting event, at distances of 100 meters, 200 meters and 500 meters (330, 660 and 1640 feet) downwind, respectively. Multiplying by 12 events per year gives annual salt deposition estimates of 7.2, 3.0 and 1.2 grams/m² (1.5×10^{-3} , 6.1×10^{-4} and 2.5×10^{-4} lbs/ft²) per year for a 4-lane at-grade freeway at the same respective distances. Because I-355 will be a 6-lane freeway, the deposition values are expected to be 50% higher than these values along at-grade portions of I-355, assuming proportional emissions per number of freeway lanes.

One area of particular interest is the elevated portion of I-355 as it crosses the Des Plaines River corridor. An important difference between the I-55 Study Area and this I-355 elevated section may cause significant differences in the rate of salt deposition downwind of the two freeways. I-55 is at-grade near the site of the ISWS study, so that much of the larger salt aerosol will tend to deposit, either by gravitational settling or by plume impaction, very near the freeway. Because I-355 will be elevated by approximately 18 to 24 meters (59 to 70 feet) over the Des Plaines River corridor, salt aerosol emissions will tend to travel farther downwind before deposition. Thus, while the peak deposition along I-55 may tend to be higher at some distances very near the roadway (within 100 meters (330 feet)), the deposition from I-355 will likely be higher than measured for I-55 at greater distances, since the elevated aerosol plume will carry farther before settling or impaction cause the aerosols to deposit to the surface.

In summary, review of the ISWS salt deposition study for the I-355 southern extension, together with historical meteorological data analysis, has indicated the following with respect to salt spray deposition associated with the Preferred Alternative:

- Aerial salt deposition from the I-355 bridge over the Des Plaines River corridor will occur primarily east of the proposed highway, with very little deposition occurring to the west.
- The aerial salt deposition plume downwind of the I-355 bridge over the Des Plaines River is expected to carry farther downwind, relative to the I-55 salt plume, which will have its maximum deposition impacts much nearer the free-way.

Alternative Deicing Chemicals

No substantive change in impacts has occurred to this resource since publication of the 1996 FEIS. Refer to [1996 FEIS, Section 4.10.2.3](#) for a description of resource impacts.

Measures to Minimize

No substantive change in impacts has occurred to this resource since publication of the 1996 FEIS. Refer to the [1996 FEIS, Section 4.10.2.4](#) for a description of resource impacts.

4.10.3 Impacts to Wetlands

The wetland impacts presented in this section have been recalculated based on the findings of a wetland delineation update conducted within the Project Corridor by the Illinois Natural History Survey in June 2000.

The 2000 Wetland Technical Delineation Report ([Plocher, 2000](#)) identified 39 wetlands within the Project Corridor. Of this total, 18 will be impacted by the Preferred Alternative. Impacts will total 3.93 hectares (9.7 acres) based on the concrete bridge alternative, considered worst-case based on pier design. This total impact will be direct and permanent and will consist of 2.39 hectares (5.92 acres) of emergent wetland, 0.50 hectares (1.23 acres) of forested wetland, 0.65 hectares (1.59 acres) farmed wetland, 0.21 hectares (0.51 acres) excavated wetland and 0.18 hectares (0.45 acres) of unconsolidated bottom wetland.

Direct impacts to wetlands will include filling, vegetation removal and drainage changes that will result in the permanent loss of the wetland acreage impacted, as well as loss of its associated functional values for sediment trapping, flood storage and wildlife habitat.

Total wetland loss has decreased 0.28 hectares (0.7 acres) from the 1996 FEIS reported wetland loss. The difference observed from the 1996 FEIS to present is due to the shifting of the wetland boundaries causing minor reductions within areas to be impacted. Table 4-1 summarizes the area of direct, permanent wetland loss due to highway construction of the Preferred Alternative. Those wetland sites no longer impacted by the Preferred Alternative are discussed below in the section, former wetland losses. The wetland sites no longer impacted by the Preferred Alternative include: 2, 12, 13, 23, 25 and 26. Exhibits 4-3 through 4-5 locate wetlands in relation to the Preferred Alternative. [Refer to the 1996 FEIS Section 4.10.3](#) for a description of wetland impacts.

Table 4-1 Summary of Wetland Impacts					
Wetland Number	Wetland Class	Total Wetland Area, Hectares (Acres) ^(b)	Wetland Loss		Function(s) Lost
			Hectares (Acres) ^(c)	Percentage	
1	PEMC	0.43 (1.06)	0.43 (1.06)	100	Sediment and nutrient trapping and waterfowl habitat
6	ND (PEMC) ^(d)	0.28 (0.70)	0.28 (0.7)	100	Sediment and nutrient trapping
8	PEMA _f	0.34 (0.83)	0.34 (0.83)	100	Sediment and nutrient trapping and waterfowl habitat
9A	PFO1C	0.31 (0.77)	0.012 (0.03)	3.6	None
9D	PEMC PFO1C	3.49 (8.63) ^(e)	0.053 (0.13)	1.5	None
10	PEMC	1.1 (2.7)	0.004 (0.01)	0.4	None
12A	ND (PEMC) ^(d)	0.12 (0.30)	0.004 (0.01)	3.3	None
16	PUBF _x	0.21 (0.51)	0.21 (0.51)	100	Sediment and nutrient trapping, and waterfowl habitat
18	PFO1C	2.31 (5.7)	0.053 (0.13)	2.2	Reduced capacity for flood storage and sediment trapping, minimal habitat losses
22	ND (PEM) ^(d)	0.41 (1.02)	0.081 (0.2)	19.6	Sediment and nutrient trapping
30	PEMC	0.89 (2.2)	0.040 (0.1)	4.5	Sediment and nutrient trapping
33	PEMC	0.73 (1.8)	0.73 (1.8)	100	Flood storage and wildlife habitat, sediment and nutrient trapping
35	PUBG	0.12 (0.29)	0.12 (0.29)	100	Flood storage and waterfowl habitat, sediment and nutrient trapping
37	PUBF	0.06 (0.16)	0.065 (0.16)	100	Sediment trapping
41	PEMA _f	0.31 (0.76)	0.31 (0.76)	100	Sediment and nutrient trapping
42	PEMF PFO1C PSSI/EMF	16.9 (41.6)	1.03 (2.54)	6.1	Wildlife habitat and sediment trapping
43	PEMF PSSI/EMF	9.7 (24)	0.049 (0.12)	0.5	Wildlife habitat and sediment trapping
44	PEMF PFO1C	4.9 (12.1)	0.13 (0.32)	2.6	Plant diversity
	Total	42.6 (105.13) ^(a)	3.93 (9.7)		

Note (a): Total wetland hectares (acres) denote size of affected wetlands only.

(b): Minor revisions to wetland areas have been made due to refinement of the wetland boundaries and highway geometrics.

(c): The losses in the Des Plaines River valley are presented conservatively assuming the concrete bridge alternate. The concrete bridge was used for calculating impacts of the Preferred Alternative because it caused greater wetland impacts due to its pier design.

(d): Wetland Class as depicted on National Wetland Inventory (NWI) maps (Mokena, Joliet, and Romeoville 7.5 minute Quadrangles):

ND (Not depicted on maps); NWI codes in parenthesis from Plocher and Tessene (1992).

(e): The wetland area of site 9D includes wetlands 9B, 9D and 9E.